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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,173	04/16/2004	Kanji Kirmoto	SIC-04-021	9874
29863	7590	05/31/2006	EXAMINER	
DELAND LAW OFFICE P.O. BOX 69 KLAMATH RIVER, CA 96050-0069			WILLIAMS, THOMAS J	
			ART UNIT	PAPER NUMBER
			3683	

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/826,173	Applicant(s) KIRIMOTO ET AL.	
	Examiner Thomas J. Williams	Art Unit 3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-68 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-18,21-25,31-60,63,64,67 and 68 is/are rejected.
- 7) ☒ Claim(s) 4,5,19,20,26-30,61,62,65 and 66 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 15, 2006 has been entered.

Reissue Applications

2. Claims 37-53 are rejected under 35 U.S.C. 251 as being improperly broadened in a reissue application made and sworn to by the assignee and not the patentee. A claim is broader in scope than the original claims if it contains within its scope any conceivable product or process which would have infringed the original patent. A claim is broadened if it is broader in any one respect even though it may be narrower in other respects.

Claim 37 omits limitations pertaining to the interior of the actuating mechanism, specifically “an input cam movably mounted within the caliper housing to move in a rotational direction about a longitudinal axis, but not in an axial direction, said input cam having a first camming surface with an axially extending guide member non-movably fixed thereto at said longitudinal axis, and an output cam movably mounted within said caliper housing to move in the axial direction in response to rotation of said input cam, but not in the rotational direction, said output cam having a second camming surface with an axially extending bore, said guide member being at least partially disposed within said bore to ensure smooth relative movement between said input and output cams”, added

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during prosecution of 09/531,570 (US 6,557,671) in the amendment dated November 8, 2002 to overcome the outstanding rejection in view of Kawaguchi (US 3,789,959).

The above limitations have been replaced with new limitations directed to an exterior portion of the actuating arm, specifically “wherein the actuated mechanism comprises an elongated actuating arm rotatably coupled to the caliper housing to cause the actuated mechanism to move the first friction member from the release position towards the braking position; and wherein the actuating arm has a curved surface with a first portion coincident with a cable clamp and a second portion that extends from the first portion towards the cable support so that the cable, when coupled to the cable clamp, approaches the guide surface from the opening in the cable support essentially tangent to the guide surface and is supported by the guide surface when the first friction member is in the release position”.

The omitted limitations relate to previously surrendered subject matter and are directed to the input cam and the output cam and the specifics thereof, whereas the replacement limitations are directed to the actuating arm. The replacement limitations are not related to the omitted limitations, therefore a recapture rejection exists.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-3, 6, 7, 11-15, 21-25, 32, 36, 63, 64, 67 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carre et al. in view of US 6,148,964 to Huang.

Re-claim 1, Carre et al. teach in figure 1 a cable disc brake capable for use with a bicycle, comprising: a caliper housing (partially shown as 10, see also column 3 lines 4-20); a first friction member and second friction member as known with caliper disc brakes (not shown); an actuated mechanism 22 is coupled to the caliper housing for moving the friction members into engagement with a rotor, the actuated mechanism includes: an input cam (interpreted as 16, the threaded surfaces are in functionally equivalent to camming surfaces) moves in a rotational direction yet is prevented from moving axially, the overall length of element 16 is broadly interpreted as an axially extending guide member; an output cam 18 is movably mounted with the caliper housing to move in the axial direction but not the rotational direction, cam 18 is provided with cooperating camming surfaces, the guide member is partially disposed within the output cam. However, Carre et al. fail to teach a mounting bracket attached to a bicycle for receiving and holding the disc brake assembly.

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Huang teaches a common mounting bracket 4 structured as part of a bicycle for receiving and holding in place a mechanical disc brake assembly. It would have been obvious to one of ordinary skill in the art when having utilized the disc brake assembly of Carre et al. on a bicycle to have provided the bicycle with some sort of mounting bracket as taught by Huang, thus providing an easy means by which to mount the brake assembly to the bicycle.

Re-claims 2 and 3, the guide member is interpreted as a pin.

Re-claim 6, the actuating mechanism further includes an actuating arm 22.

Re-claim 7, spring 42 biases the actuating arm to a release position.

Re-claim 11, Carre et al. teach in figure 1 a cable disc brake, comprising: a caliper housing (partially shown as 10, see also column 3 lines 4-20); a first friction member and second friction member as known with caliper disc brakes (not shown); an actuated mechanism 22 is coupled to the caliper housing for moving the friction members into engagement with a rotor, the actuated mechanism includes: an input cam (interpreted as 16, the threaded surfaces are in functionally equivalent to camming surfaces) moves in a rotational direction yet is prevented from moving axially, the overall length of element 16 is broadly interpreted as an axially extending guide member; an output cam 18 is movably mounted with the caliper housing to move in the axial direction but not the rotational direction, cam 18 is provided with cooperating camming surfaces, the guide member is partially disposed within the output cam.

However, Carre et al. fail to teach a mounting bracket attached to a bicycle for receiving and holding the disc brake assembly.

Huang teaches a common mounting bracket 4 structured as part of a bicycle for receiving and holding in place a mechanical disc brake assembly. It would have been obvious to one of

ordinary skill in the art when having utilized the disc brake assembly of Carre et al. on a bicycle to have provided the bicycle with some sort of mounting bracket as taught by Huang, thus providing an easy means by which to mount the brake assembly to the bicycle.

Re-claim 12 and 13, the guide member in Carre et al. is interpreted as a pin.

Re-claim 14, the actuating mechanism in Carre et al. further includes an actuating arm
22.

Re-claim 15, Carre et al. teach a spring 42 for biasing the actuating arm to a release position.

Re-claims 21-23, see figure 1.

Re-claims 24 and 25, the input cam includes a bushing (see figure 1, note L-shaped element adjacent the shaft) mounted on the operating shaft of the input cam.

Re-claim 32, see figure 1, the rear section of element 10 functions as a cover.

Re-claim 36, see figure 1.

Re-claims 63 and 67, see figure 1 in Le Deit et al., the camming surfaces move away from each other during brake actuation.

Re-claims 64 and 68, the brake force is disposed radially outwardly from the bore.

6. Claims 37-45 and 47-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,647,475 to Le Deit et al. in view of Carre et al. and in view of US 6,148,964 to Huang.

Re-claims 37-40 and 54, Le Deit et al. teach a cable disc brake capable for use on a bicycle, comprising: a caliper housing 12, a cable support 44, a first friction member 20a and a second friction member 20b; an actuating mechanism 10 that moves the first friction member towards the second friction member for engaging a rotor 11; the actuating mechanism comprises

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an elongated actuation arm 32 coupled to the caliper housing to cause the mechanism to move the first friction member from the release position to the braking position. However, Le Deit et al. fail to teach the actuating arm having the specific structure as recited in claim 37, in particular the curved guide surface, and Le Deit et al. fail to teach a mounting bracket on a bicycle for supporting the brake assembly.

Carre et al. teach a cable actuated disc brake having an actuating arm with a curved guide surface with a first portion coincident with a cable clamp 58 and a second portion that extends from the first portion to a cable support, such that when the cable is coupled to the actuation arm, the cable approaches the guide surface from the cable support (in particular the support taught by Le Deit et al.) essentially in a straight line and essentially tangent to the guide surface and is supported by the guide surface when the friction member is in the release position. Furthermore, Carre et al. teach that the curved guide surface formation of the actuation arm provides for an increase in torque exerted during rotation, see column 4 lines 61-64. It would have been obvious to one of ordinary skill in the art to have replaced the actuating arm of Le Deit et al. with the actuating arm taught by Carre et al., thus improving the overall brake performance of the cable actuated brake mechanism. With regards to claims 38-40, the guide surface is formed by a projection that extends towards the cable support (see figure 6); a radially outer portion extends towards the cable support, a radially inner portion extends away from the cable support, the radially inner portion is illustrated as a slight inwardly slanted surface; the projection is disposed in close proximity to a radially outermost portion of the arm.

Huang teaches a common mounting bracket 4 structured as part of a bicycle for receiving and holding in place a mechanical disc brake assembly. It would have been obvious to one of

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ordinary skill in the art when having utilized the disc brake assembly of Le Deit et al. on a bicycle to have provided the bicycle with some sort of mounting bracket as taught by Huang, thus providing an easy means by which to mount the brake assembly to the bicycle.

Re-claims 41 and 42, see spring around the cable in figure 2.

Re-claims 43-45, see bolt 60, arm 44 is capable of being rotated relative to the caliper housing thus adjusting the biasing force of the spring.

Re-claim 47, see bolt 60.

Re-claims 48 and 49, see column 2 lines 37-40.

Re-claims 50-53, Le Deit et al. as modified by Carre et al. fail to teach the specifics of the disc brake when mounted to a front fork of a bicycle. Huang teaches a typical manner by which to mount a mechanical disc brake to a front fork of a bicycle. The caliper housing includes a first mounting flange with a first opening 317, a second mounting flange with a second opening 317, the first opening is above a rotational axis, the second opening is below the rotational axis, the cable support is disposed about the rotational axis, the guide surface (as taught in Carre et al.) would be rearwardly of the rotational axis, and the cable support is rearwardly of the rotational axis. It would have been obvious to one of ordinary skill to have utilized the teachings of Huang when having mounted the brake apparatus of Le Deit et al. as modified by Carre et al., on a front fork of a bicycle, thus utilizing the front fork as a means of protecting the brake assembly from frontal impact.

7. Claims 8-10, 16-18, 31 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carre et al. in view of Huang as applied to claim 1 above, and further in view of US 5,960,914 to Isai.

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Re-claims 8, 16 and 33, Carre et al. as modified by Huang fail to teach a torsion spring as a biasing member. Isai teaches a torsion spring 131 used for biasing the actuating arm back to a non-actuated position or rest position. The torsion spring is positioned between the caliper and the actuating arm, with a second end directly connected to the actuating arm. It would have been obvious to one of ordinary skill in the art to have provided the brake apparatus of Carre et al. with a return biasing member such as a torsion spring as taught by Isai, thus providing an inexpensive means by which to effectively release the brake.

Re-claims 9, 17, 34 and 35, spring 20 in Carre et al. is interpreted as a return spring.

Re-claims 10 and 18, the actuating arm in Carre et al. has a cable attachment.

Re-claim 31, the torsion spring as taught by Isai is interpreted as being adjustably coupled to the caliper housing and the arm, since during assembly the torsion spring would experience some adjustment, i.e. compression during installation.

8. Claims 55-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Deit et al. in view of Carre et al. and Huang as applied to claim 37 above, and further in view of Isai.

Re-claims 55, 56, 58 and 59, Le Deit et al. as modified by Carre et al. and Huang fail to teach a torsion spring. Isai teaches a torsion spring 131 used for biasing the actuating arm back to a non-actuated position or rest position. The torsion spring is positioned between the caliper and the actuating arm, with a first end adjustably connected to the caliper and a second end directly connected to the actuating arm. It would have been obvious to one of ordinary skill in the art to have provided the brake apparatus of Le Deit et al. with a return biasing member such as a torsion spring as taught by Isai, thus providing an inexpensive means by which to effectively

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release the brake. The torsion spring of Isai would have eliminated the need for spring surrounding the cable in Le Deit et al., each is considered functionally equivalent.

Re-claim 57, the torsion spring as taught by Isai is interpreted as being adjustably coupled to the caliper housing and the arm, since during assembly the torsion spring would experience some adjustment.

9. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Le Deit et al. as modified by Carre et al., Huang and Isai as applied to claim 58 above, and further in view of US 5,201,402 to Mott.

Le Deit et al. as modified fails to teach a plurality of holes for receiving the torsion spring, wherein the holes allow for adjustment of the torsion spring. Mott teaches the use of a plurality of holes for receiving an end of a torsion spring. The various positions of the holes offer different biasing forces. It would have been obvious to one of ordinary skill in the art to have provided the caliper housing, and even the actuating arm of Le Deit et al. with a plurality of holes for receiving an end of the torsion spring as taught by Mott, this would have provided an easy means by which to vary the biasing force of the spring.

Allowable Subject Matter

10. Claims 4, 5, 19, 20, 26-30, 61, 62, 65 and 66 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

11. Applicant's arguments filed May 15, 2006 have been fully considered but they are not persuasive. The examiner respectfully disagrees with the applicant's assessment as to the

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applicability of Clement with regards to the recapture rejection. The recitations pertaining to the input cam and output cam have been deleted and replaced with limitations pertaining to the structure of the actuating arm, in particular a guide surface of the actuating arm. The limitations related to the structure of the actuating arm are not considered related to the deleted design and operational features of the input cam and the output cam. As understood by the examiner if the omitted limitation is replaced by another limitation that is not related to the omitted limitation, then the recapture rejection appears proper, see *Clement*, 131 F.3d at 1470, 45 USPQ2d at 1165.

It is the opinion of the examiner that the brake devices of either Carre et al. or Le Deit et al. are capable of being sized in such a manner that would prove compatible with bicycles. With regards to the nonanalogous art remarks, it is the opinion of the examiner that since the brake system sought for patent by the applicant is not a traditional bicycle brake but rather a mechanically actuated disc brake that the reliance upon Le Deit et al., Carre et al. and Huang for the above rejections is proper. It is unclear to the examiner why the Office should be restricted to certain mechanically actuated disc brake systems during the examination of the claims, in particular systems that disclose their use on bicycles. Clearly any one of the above mentioned disc brake systems can be sized appropriately for their use on a bicycle. It is unreasonable to believe that a disc brake designed and sized for use on a motor vehicle would simply be installed on a bicycle. This notion put forth by the applicant is simply unsupported.

Upon further review the use of a torsion spring as a member for biasing the actuating arm back to a rest position is believed by the examiner to be an obvious modification. Isai teaches the use of such a torsion spring.

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Conclusion

12. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Thomas Williams whose telephone number is 571-272-7128. The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James McClellan, can be reached at 571-272-6786. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-6584.

TJW

May 23, 2006

**THOMAS J. WILLIAMS
PRIMARY EXAMINER**

Thomas Williams
AU 3683
5-23-06